AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF PAGES
N/A	1	36

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
0003	17 JUN 03	N/A	

6. ISSUED BY	CODE	7. ADMINISTERED BY *(If other than Item 6)*	CODE
DEPARTMENT OF THE ARMY CORPS OF ENGINEERS SACRAMENTO 1325 J STREET SACRAMENTO, CALIFORNIA		SEE ITEM 7	

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*		9A. AMENDMENT OF SOLICITATION NO.
	(√) X	DACW07-03-B-0003
		9B. DATED *(SEE ITEM 11)* 6 JUN 2003
		10A. MODIFICATION OF CONTRACTS/ORDER NO. N/A
		10B. DATED *(SEE ITEM 13)* N/A
CODE	FACILITY CODE	

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(√) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER *(Specify type of modification and authority)*

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

OAKLAND INNER AND OUTER HARBOR - 42 FOOT MAINTENANCE PROJECT
ALAMEDA & SAN FRANCISCO COUNTIES, CALIFORNIA

1 ENCL

1) SECTION 01005, 01305, 01330 and 02480.

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
15B. CONTRACTOR/OFFEROR _____ *(Signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ *(Signature of Contracting Officer)*	16C. DATE SIGNED

TECHNICAL CLAUSES

DIVISION 1 - GENERAL REQUIREMENTS

SECTION 01005

SUPPLEMENTARY CONDITIONS

1. CONSTRUCTION RIGHTS-OF-WAY.

The construction rights-of-way required to perform the work under this contract will be furnished without cost to the Contractor

2. PERMITS.

2.1 Under Contract Clause “PERMITS AND RESPONSIBILITIES,” the Contractor is obligated to obtain and comply with all licenses and permits required by Federal, State, and local laws, codes, and regulations, including the Ocean Dumping Final Rule, Designation of SF-DODS Site, 40 CFR Part 228 in Appendix 13. In the event of any conflict between these specifications and/or drawings and 40 CFR Part 228, the 40 CFR Part 228 requirements govern.

2.2 The following dredging permits have been obtained:

2.2.1 The Government has obtained the necessary dredging permits and approvals, including certification from the State Regional Water Quality Control Board and the Environmental Protection Agency, for dredging and disposal of dredged materials in the Government-furnished deep ocean disposal site (“SF-DODS”).

2.3 The Contractor shall be responsible for making his own arrangements for permits, other than those listed herein, required to complete the work under this contract.

3. ORDER OF WORK.

3.1 General. With reference to Contract Clause "SCHEDULE FOR CONSTRUCTION CONTRACTS" and Special Clause "COMMENCEMENT, PROSECUTION AND COMPLETION OF WORK," the Contractor shall mobilize adequate labor, equipment, materials, and supplies and make a determined and continuous effort to complete the contract work within the time specified.

3.2 Mobilization shall commence not later than three (3) calendar days after date the Contracting Officer signs the notice to proceed. Dredging shall commence not later than ten (10)

calendar days after the date of receipt of notice to proceed. The Contracting Officer will fax the notice to proceed to the Contractor on the day of signature. The facsimile will be the official notice to proceed for the contract.

4. GENERAL SAFETY REQUIREMENTS.

4.1 General. The Contractor's attention is directed to the Corps of Engineers Manual, EM 385-1-1, "Safety and Health Requirements," dated 3 September 1996 which is included in the contract by reference in the Contract Clause "ACCIDENT PREVENTION." The Safety and Health Requirements will be strictly enforced under this contract, including but not limited to requirements for "Floating Plant and Marine Activities" and "Machinery and Mechanical Equipment" and Coast Guard approved survival suits for all personnel on-board the ocean disposal vessels. EM 385-1-1 and its changes are available at http://www.hq.usace.army.mil (at the HQ home page select Safety and Occupational Health). The contractor shall be responsible for complying with the current edition and all changes posted on the web as of the effective date of this solicitation.

4.1.1 Accident Prevention Plan. Prior to commencement of work, the Contractor shall submit an accident prevention plan written for the specific work and hazards of the contract, which shall be subject to review and acceptance by the Contracting Officer. Guidelines for the preparation of the accident prevention plan are in Appendix A of EM 385-1-1, a sample copy of which is attached in Appendix 8.

4.1.2 Hazard Analysis. A job hazard analysis shall be prepared for each major phase of work and submitted for review and acceptance by the Contracting Officer prior to commencement of work. The outline for the analysis is shown in Figure 1-1 in Appendix 8.

4.2 Occupational Safety and Health Act (OSHA) Standards. The "Occupational Safety and Health Act (OSHA) Standards for Construction" (Title 29, Code of Federal Regulations Part 1926 as revised from time to time) and the Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1, dated 3 September 1996, are both applicable to this contract. The more stringent requirements of the two standards will be applicable.

4.3 Fire Control.

4.3.1 General. The Contractor shall supply all fire fighting equipment, supplies and personnel and perform all work required by Federal, State and local laws and regulations. Delays due to fire will not be the basis of claim by the Contractor for additional compensation.

4.3.2 Fire Extinguishers. The following policy applies to fire extinguishers for the Contractor's equipment.

(1) Each piece of internal combustion engine drive equipment shall be equipped with a fire extinguisher in accordance with recommendation of the National Fire Protection Association as appropriate.

(2) The minimum approved rating of new extinguishers should be not less than 5-B:C (See NFPA No. 10-1988, OSHA 1926.150, OSHA 1926.151, EM 385-1-1 Section 9).

4.4 Equipment Certification and Inspection.

4.4.1 SEAWORTHINESS CERTIFICATION. Before any plant or equipment, including hydrographic survey equipment and crew boat, is put into use on the job, it shall be inspected and tested by the Contractor's operator of the plant or equipment or the manufacturer's representative, in the presence of the Contractor's Safety Officer. The Contractor shall furnish certification in writing that the plant or equipment is operating within manufacturer's tolerances and specifications, is in safe operating condition, and complies with the applicable safety requirements of the contract. All floating plant or dredges shall have a current Coast Guard certification, ABS classification, or marine survey by a NAMS or SAMS surveyor. All dredges and quarter boats not subject to USCG inspection and certification or not having a current American Bureau of Shipping (ABS) classification shall be inspected in the working mode annually by a marine surveyor accredited by the National Association of Marine Surveyors (NAMS) or the Society of Accredited Marine Surveyors (SAMS) and having at least five years experience in commercial marine plant and equipment. A qualified person shall inspect all other plant annually. The inspection shall be documented, and a copy of the most recent inspection report shall be posted in a public area on board the vessel and a copy shall be furnished to the designated authority upon request. The inspection shall be appropriate for the intended use of the plant and shall, as a minimum, evaluate structural integrity and compliance with NFPA 302, Fire Protection Standard for Pleasure and Commercial Motor Craft. EM 385-1-1, Section 19.A.01.b.

4.4.2 The Floating Plant and Mobile Construction Equipment Inspection Checklist: Using checklist in Appendix 2, an inspection shall be completed for each piece of floating plant and the completed checklist shall be furnished to the Contracting Officer prior to plant use.

4.4.3 Equipment Inspection. After receipt of the certification required in subparagraph "Equipment Certification" and the checklist in subparagraph "The Floating Plant and Mobile Construction Inspection Checklist" above, a Government Inspector shall be given eight hours to inspect all plant and equipment to be utilized. He will inspect to determine conformance with the manufacturer's specifications furnished by the Contractor and with requirements of the manual, "Safety and Health Requirements," EM 385-1-1, dated 3 September 1996. The Contractor will not be permitted to use any plant or equipment on the work under this contract until the Government has been allowed the opportunity for inspection during normal working hours and necessary repairs made for deficiencies found on the checklist. Any waiver or delay by the Contractor for any reason of this preinspection will not serve to excuse any noncompliance with safety regulations or the justification of a time extension.

4.4.3.1 Cranes. Cranes and crane operators shall be in compliance with EM 385-1-1 for the life of the contract. The Contractor (including subcontractors) shall have cage boom guards, insulating links, or proximity warning devices on cranes that will be working adjacent to power lines. These devices shall not alter the requirements of any other regulation of this part - even if law or other regulation requires such device. Insulating links shall be capable of withstanding a 1-minute dry low frequency dielectric test of 50,000 volts, alternating current (EM 385-1-1, Section 11.E.07). Calibration records or stamped date of required manufacturer inspection of proximity warning devices shall be kept on the crane. Additionally, prior to any work commencing an Activity Hazard Analysis (EM 385-1-1, Fig.1-1) identifying and satisfying EM 385-1-1, Section 11.A.02, 11.E.03, 11.E.04 and 11.E.05 requirements shall be submitted and accepted by the Contracting Officer.

4.5 Accident Reporting. As a part of the requirements for reporting accidents in accordance with EM 385-1-1, Section 1, the Contractor shall; (a) Report all injuries to the designated authority immediately; (b) Submit Corps of Engineers Accident Investigation Report (ENG FORM 3394) within three (3) calendar days; (c) The Prime Contractor shall submit at the 50% point and at 100% of project completion, using form in Appendix 7-1, a written summary of Worker's Compensation Claims filed by workers on the project. The report will include all subcontractors. The main report covering the prime contractor claim will be certified as "correct and true" by the contractor's compensation insurance carrier. The same certification will be required for subcontractor reports; (d) In the event of death or vessel loss, the Contractor shall verbally notify the Contracting Officer within 3 hours, followed by a written report within 24 hours; and (e) Certify and submit 'Safety and Exposure Report' using the form in Appendix 15, by the 19th of each month.

4.6 Anchoring Discharge Lines. The Contractor shall anchor all discharge lines in a manner that will prevent damage to moored or "underway" vessels. Prior to commencing dredging, the Contractor shall submit an "anchoring plan" for review by the Contracting Officer. No work under this paragraph will be allowed until the Contractor has answered all comments from the review. After the review and finalization of the anchoring plan, the Contractor shall perform, by an independent contract survey, a pre-anchoring hydrographic survey of the pipe alignment. The following survey procedures shall apply: (1) cross-sections shall proceed along centerline at 100' (30.5 m) intervals and extend 100' (30.5 m) each side of the pipe centerline; (2) cross-sections and soundings shall be plotted at 1"=100' (30.5 m). Thereafter, surveys shall be performed once each month for the life of the contract and shall be submitted to the Contracting Officer through the Contractor Quality Control program. If any survey reflects mounding caused by leakage from the discharge line, the Contractor shall immediately remove the mound materials and dispose of them at the disposal site. If the Contractor elects to place the discharge line within the project dredging limits, both top of anchors and top of discharge line shall be below project standard depth. If alignment of the discharge line is outside the project dredge limits, the Contractor shall visually mark pipe and anchors as required for safety of all users of the area.

4.7 Fuel oil transfer operations shall conform to U.S. Coast Guard design regulations. (33CFR 156.120) Personnel handling or working in the vicinity of coal tar (creosote) treated piles,

bottom debris, dredge material shall be afforded appropriate NIOSH approved personal protective equipment during these exposures (i.e. gloves).

4.8 Navigation. The Contractor's operations shall conform to the U.S. Coast Guard publication "Navigation Rules, International-Inland, COMDT INST M16672.2D," dated 99 MAR 25.

4.8.1 Navigation Aids. Navigation aids located within or near the areas required to be dredged will be removed, if necessary, by the U.S. Coast Guard in advance of dredging operations. The Contractor shall not remove, change the location of, obstruct, willfully damage, make fast to, or interfere with any aid to navigation. The Contractor shall notify the Group Commander, 11th Coast Guard District, Aids to Navigation Office, Building 50-6, Coast Guard Island, Alameda, California 94501-5100, Telephone (510) 437-2976, in writing, with a copy to the Contracting Officer, 30 days in advance of the time he plans to dredge adjacent to any aids which require relocation to facilitate dredging. The Contractor shall contact the U.S. Coast Guard for information concerning the position to which the aids will be relocated.

4.8.2 Dredging Aids. The Contractor shall obtain approval from the U.S. Coast Guard for all buoys, dredging aid markers to be placed in the water and dredging aid markers affixed with a light prior to the installation. Dredging aid markers and lights shall not be colored or placed in a manner that they will obstruct or be confused with navigation aids.

4.8.3 Notice to Mariners. Upon receipt of notice to proceed, the Contractor shall contact the U. S. Coast Guard in sufficient time in advance of dredging operations so that the Coast Guard can include the dredging time and locations in its Notice to Mariners.

4.8.4 Alameda Oakland Ferry Operations. The Contractor's operations shall not obstruct, detour, delay or hazard the Alameda Oakland Ferry operations. The Contractor shall be responsible for contacting the Alameda Oakland Ferry for current and updated operation routes and schedules. (Telephone 510-522-3300)

4.8.5 Signal Lights. The Contractor shall display signal lights and conduct his operations in accordance with the General Regulations of the Department of the Army and of the Coast Guard governing lights and day signals to be displayed by towing vessels with tows on which no signals can be displayed, vessels working on wrecks, dredges, and vessels engaged in laying cables or pipe or in submarine or bank protection operations, lights to be displayed on dredge pipe lines, and day signals to be displayed by vessels of more than 65 feet in length moored or anchored in a fairway or channel, and the passings by other vessels of floating plant working in navigable channels, as approved by the Secretary of the Army (33 C.F.R. 201.1-201.16) and the Commandant, U.S. Coast Guard (33 C.F.R. 80.18-80.31a and 33 C.F.R. 95.51-95.70).

4.8.6 Aerial Obstruction Light. The Contractor shall furnish and install a continuous red light at the highest point on the dredge or vessel as a warning to aircraft in the vicinity of the dredge or

construction area. The aerial light shall meet the requirements of FAA Publication Advisory Circular 70/7460-1J, Appendix 12.

4.9 Radiological Safety. If the Contractor intends to use any radiological source on the project such use shall be reported by letter to the Contracting Officer. The letter shall state the type or radioactive material in the source, serial number of the equipment, manufacturer, licensee, and the purpose for which the equipment will be used. A copy of the last safety certification(s) from the appropriate Federal and State agencies shall be included with the letter. No radiological materials shall be stored, handled or used on this contract without the prior approval of the Contracting Officer. The storage, handling and use of radioactive materials shall comply with the pertinent State and Federal (EM 385-1-1)
safety regulations.

4.10 Floating Plant USCG License Requirements. Each of the Contractor's personnel operating floating plant on the project shall possess a current and valid USCG (U.S. Coast Guard) operator's license for each specific type or class of floating plant to be operated. The Contractor shall submit copies of the licenses to the Contracting Officer prior to operation of floating plant on the project.

4.11 Dive Plan A Dive Plan shall be submitted as a safety submittal item of the contract Accident Prevention Plan. All contract diving operations shall be performed in accordance with, EM 385-1-1, section 30.A.04 dated 3 Sep 1996 or the EM385-1-1 in use at time of the contract award. At a minimum, the dive plan will address items in EM 385-1-1, section 30.A.13.

4.12 Marine Transportation Safety. During dredging, disposal and construction operations, the Contractor shall implement the following U.S. Coast Guard provisions to ensure marine transportation safety:

4.12.1 All Contractor's vessels operating in or near a navigation channel shall monitor VHF-FM Channel 14.

4.12.2 In the event that the Contractor's vessels restrict or affect navigation of other vessels, Contractor's vessel operators shall transmit and confirm their intentions and any other necessary information via Channel 14 to promote safe navigation for all vessels in the project vicinity.

4.12.3 U.S. Coast Guard shall be contacted via radio (S.F. Bay Traffic on Channel 14) each time when: (1) A Contractor's vessel moves a scow between the dredge and the disposal sites; (2) The dredge plant commences dredging operations; and (3) The dredge operators change dredge location. Upon notification, S.F. Bay Traffic will advise affected shipping traffic.

4.12.4 Once the dredge is positioned, S.F. Bay Traffic shall be informed of the extent of any channel obstruction that may occur from dredging operations. S.F. Bay Traffic shall be informed of

positions of dredging equipment and vessels at all times.

4.13 Tug and Scow Operator Certification. Tug and scow operators shall be licensed masters. Prior to dredging or construction operations, the Contractor shall submit certification of this requirement.

4.14 Emergency Planning.

4.14.1 Means of Escape for Personnel Quartered, or Working on Floating Plant. Two means of escape shall be provided for assembly, sleeping, and messing areas on floating plants. For areas involving 10 or more persons, both means of egress shall be through standard size doors opening to different exit routes. Where nine or fewer persons are involved, one of the means of escape may be a window (minimum dimensions 24-inches by 36-inches), which leads to a different exit route. Refer to Section 19 of EM 385-1-1.

4.14.2 Emergency Alarms and Signals.

4.14.2.1 Alarms. Emergency alarms shall be installed and maintained on all floating plant requiring a crew where it is possible for either a passenger or crewman to be out of sight or hearing from any other person. The alarm system shall be operated from the primary electrical system with standby batteries on trickle charge that will automatically furnish the required energy during an electrical-system failure. A sufficient number of signaling devices shall be placed on each deck so that the sound can be heard distinctly at any point above the usual background noise. All signaling devices shall be so interconnected that actuation can occur from at least one strategic point on each deck.

4.14.2.2 Signals.

4.14.2.2.1 Fire Alarm Signals. The general fire alarm signal shall be in accordance with paragraph 97.13-15b of the Coast Guard Rules and Regulations for Cargo and Miscellaneous Vessels, Sub-Chapter I, 1 Sep 77 (CG 257).

4.14.2.3 Abandon Ship Signals. The signal for abandon ship shall be in accordance with paragraph 97.13-15c of the Coast Guard Rules and Regulations for Cargo and Miscellaneous Vessels, Sub-Chapter I, 1 Sep 77 (CG 257).

4.14.2.4 Man-Overboard Signal. Hail and pass the word to the bridge. All personnel and vessels capable of rendering assistance shall respond.

4.14.2.5 Hurricane Plan. A detailed plan for protection and evacuation of personnel and the Contractor's plant, in the event of an impending hurricane or storm, is required as an enclosure to the Contractor's Accident Prevention Program. This plan shall be submitted to the Contracting Officer, or

his/her representative, for review prior to the pre-construction conference. The plan shall include at least the following:

4.14.2.5.1 The time each phase of the plan will be put in effect. The time shall be the number of hours remaining for the storm to reach the worksite if it continues at the predicted speed and direction.

4.14.2.5.2 The safe harbor for personnel and plant specifically identified.

4.14.2.5.3 The name of the boat, which will be used to move the plant, its type, capacity, speed, and availability.

4.14.2.5.4 The estimated time necessary to move the plant to the safe harbor after movement is started.

4.14.2.6 Hazardous Energy Protection. The Contractor shall develop, implement and maintain at the workplace, a written Control of Hazardous Energy (Lockout/Tagout) System. Refer to Section 12 of EM 385-1-1

5. PUBLIC SAFETY.

Under the Contract Clause "PERMITS AND RESPONSIBILITIES", the Contractor shall provide temporary fencing, barricades, and/or guards as required to provide protection in the interest of public safety. Whenever the Contractor's operations create a condition hazardous to the public, he shall furnish at his own expense and without cost to the Government, such flagmen and guards as are necessary to give adequate warning to the public of any dangerous conditions to be encountered, and he shall furnish, erect, or maintain such fences, barricades, lights, signs and other devices as are necessary to prevent accidents and to avoid damage or injury to the public. Flagmen and guards, while on duty and assigned to give warning to the public that the project is under construction and of any dangerous conditions to be encountered as a result thereof, shall be equipped with red wearing apparel and a red flag. Signs, flags, lights, and other warning and safety devices shall conform to applicable city, county, and state requirements. Should the Contractor appear to be negligent in furnishing adequate warning and protective measures, the Contracting Officer will direct attention to the existence of a hazard, and the necessary warning and protective measures shall be furnished and installed by the Contractor without additional cost to the Government. The installation of any general illumination shall not relieve the Contractor of his responsibility for furnishing and maintaining all devices necessary to provide protection to all parties concerned.

6. PROJECT SIGN.

The dredge and survey boat shall each carry a project sign mounted at a highly

visible location on the dredge and the survey boat as approved by the Contracting Officer. The sign shall be constructed in accordance with Figure No. 1 included at the end of this section. Signs shall be painted semi-gloss white and lettering shall be painted in semi-gloss black. The castle decal will be furnished by the Government. The sign shall be erected as soon as possible and within 5 days after date of commencement under this contract.

6.1 Other Identification. All floating plant, including survey vessels, shall carry signs, both port and starboard, identifying that they are working under Corps of Engineers contract. The signs shall have red block lettering, not less than six inches high with the wording "U.S. ARMY CORPS OF ENGINEERS CONTRACT NO. DACW07-03-C-____. Sign background shall be white. Number and size of sign, lettering and other sign features shall be determined at the pre-construction meeting.

7. BULLETIN BOARD.

7.1 General. The Contractor shall construct and erect a bulletin board which shall be accessible at all times and shall contain a copy of wage rates, equal opportunity notice and such other items required to be posted. The bulletin board shall be mounted at a highly visible location on the dredge, or erected at the location directed by the Contracting Officer. The bulletin board shall be erected as soon as possible and within 5 days after date of receipt of notice to proceed.

7.2 Construction. The bulletin board shall be weatherproof, approximately 36 inches wide and 30 inches high, with hinged glass door. Bulletin board shall be painted or have approved factory finish.

7.3 Maintenance and Disposal. The Contractor shall maintain the bulletin board in good condition throughout the life of the contract. The bulletin board shall remain the property of the Contractor and upon completion the contract, shall be removed from the site.

8. HARD HAT SIGN.

The Contractor shall construct and erect a hard hat sign mounted at a highly visible location on each dredge. The hard hat sign shall be constructed in accordance with Figure 2 included at the end of this section. Supporting post or posts shall be sufficiently rigid to support the sign in an upright position under all anticipated conditions. Where necessary, posts shall be braced. The hard hat sign shall be erected as soon as possible and within 5 days after date of commencement of dredging.

9. PRE-DREDGING**/PRE-CONSTRUCTION** CONFERENCE.

9.1 After award of contract, a pre-dredging**/pre-construction** conference will be held at such time and location as determined by the Contracting Officer for purposes of discussing and developing mutual understanding between the Contracting Officer or his authorized representative and

the Contractor's Representatives regarding the terms, conditions, and requirements of the contract. Members of the conference from the Government will include the quality assurance staff, the Contracting Officer or his authorized representative, and construction staff. Members from the Contractor shall include the dredge master, chief hydrographic surveyor, and the quality control staff. The Contractor shall present and deliver for the Contracting Officer's approval his work plans and schedule, safety program, environmental pollution control program, sequence of all phases of the work, and plans for his dredge equipment deployment to minimize navigational hazards and ensure the continuous use of the narrow waterway by navigation during the dredging operations.

9.2 The discussion will include, but will not be limited to, the following:

9.2.1 Contractor supervisory and quality control project staff.

9.2.2 Correspondence between organizations and procedures to be followed.

9.2.3 Safety program.

9.2.4 Environmental pollution control program.

9.2.5 Quality control and hydrographic procedures and requirements.

9.2.6 Project scheduling and payment procedures.

9.2.7 Horizontal and vertical dredging controls.

9.2.8 Data gathering for the DDLS program and the associated requirements.

9.2.9 Other subjects that may be of interest to the contracting parties.

9.3 Weekly Meetings. Weekly construction/survey/coordination/progress meetings shall be held between the Contractor, Contracting Officer or authorized representative, and Government personnel.

10. PUBLIC UTILITIES AND PRIVATE IMPROVEMENTS.

10.1 General. The Contractor's attention is directed to the possible existence of pipelines or public utilities or private improvements shown or not shown on the drawings which may be buried within the limits of the work or adjacent thereto and the existence of several bridges crossing the river. Bridge horizontal and vertical clearances are shown on the drawings. Care shall be taken to preserve and protect any such improvements from injury or damage during construction operations. Utilities or improvements, whether buried or not, which cannot be determined to exist through visual inspection by

the Contractor, if inadvertently damaged by the Contractor's operations, shall be promptly repaired or replaced by the Contractor, and an equitable adjustment in the amount due under the contract will be made as provided in the contract. The Contractor shall assume full responsibility for reimbursing the owners for any damage to their properties, utilities, or improvements, or interference with their services caused through his operations. The Contractor is not relieved from the responsibility set forth in Contract Clause "SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK," except as provided above.

11. LAYOUT OF WORK.

The Contractor shall lay out his work from Government-established monuments and gages as shown on the drawings and shall be responsible for all measurements in connection therewith. The Contractor shall furnish, at his own expense, all templates, platforms, equipment, markers and labor as may be required in laying out any part of the work from the gages established by the Government. The Contractor will be held responsible for the execution of the work to such lines, grades and gages as may be established or indicated by the Contracting Officer. It shall be the responsibility of the Contractor to maintain and preserve all monuments and other marks established by the Contracting Officer until authorized to remove them. It is incumbent upon the contractor or their surveyor to check the accuracy of monuments as the Government does not guarantee their accuracy. If such marks are destroyed by the Contractor or through his negligence prior to their authorized removal, they may be replaced by the Contracting Officer at his discretion. The expense of replacement will be deducted from any amounts due, or to become due, the Contractor.

12. SAFETY OF STRUCTURES.

The Contractor shall use reasonable and proper care in the prosecution of the work to assure the stability of piers and other structures lying on or adjacent to the site of work, insofar as they may be jeopardized by the dredging operations and on account of moving or mooring of equipment. The Contractor shall make good all damages resulting from the moving and mooring of his equipment and from dredging operations insofar as such damages may be caused by variations in locations and/or depth of dredging below that ordered by the Contracting Officer.

13. PAYMENT.

No separate payment will be made for the work covered under this section of the specifications, and all costs in connection therewith will be considered a subsidiary obligation of the Contractor.

* * *

SAFETY IS A TEAM EFFORT

SECTION 01305

SUBMITTAL PROCEDURES

1. APPROVED SUBMITTALS.

The approval of submittals by the Contracting Officer shall not be constructed as a complete check, but will indicate only that the general method of construction, materials, detailing and other information are satisfactory. Approval will not relieve the Contractor of the responsibility for any error that may exist, as the Contractor under the CQC requirements of this contract is responsible for the dimensions, details and satisfactory construction of all work. After submittals have been approved by the Contracting Officer, no re-submittal for the purpose of substituting materials or equipment will be given consideration unless accompanied by an explanation as to why a substitution is necessary.

2. DISAPPROVED SUBMITTALS.

The Contractor shall make all corrections required by the Contracting Officer and promptly furnish a corrected submittal in the form and number of copies as specified for the initial submittal. If the Contractor considers any correction indicated on the submittals to constitute a change to the contract, notice as required under the Contract Clause entitled "Changes" shall be given promptly to the Contracting Officer.

3. WITHHOLDING OF PAYMENT.

Payment for materials incorporated in the work will not be made if required approvals have not been obtained.

4. SUBMITTAL REGISTER.

The Contractor shall submit all items listed on the Submittal Register (ENG Form 4288) or specified in the other sections of these specifications. The Contracting Officer may request submittals in addition to those listed when deemed necessary to adequately describe the work covered in the respective section. Units of weights and measures used on all submittals shall be the same used in the contract drawings. Submittals shall be made in the respective number of copies and to the respective addresses set forth below. Each submittal shall be complete and in sufficient detail to allow ready determination of compliance with contract requirements. Prior to submittal, all items shall be checked and approved by the Contractor's Quality Control (CQC) representative and each respective transmittal form (ENG Form 4025) shall be stamped, signed, and dated by the CQC representative certifying that the accompanying submittal complies with the contract requirements. Proposed deviations from the contract requirements shall be clearly identified. Submittals shall include items such as: Contractor's,

manufacturer's, or fabricator's drawings; descriptive literature including (but not limited to) catalog cuts; diagrams; test reports; samples; certifications; warranties and other such required submittals. Submittals requiring Government approval shall be scheduled and made prior to the acquisition of the material or equipment covered thereby.

5. SCHEDULING.

Submittals covering component items forming a system or items that are interrelated shall be scheduled to be coordinated and submitted concurrently. Certifications to be submitted with the pertinent drawings shall be so scheduled. Adequate time (a minimum of 7 calendar days exclusive of mailing time) shall be allowed on the register for review and approval. No delays, damages or time extensions will be allowed for time lost in late submittals.

6. TRANSMITTAL FORM (ENG FORM 4025).

The sample transmittal form (ENG FORM 4025) in the Appendix shall be used for submitting both Government approved and information only submittals in accordance with the instructions on the reverse side of the form. These forms will be furnished to the Contractor. This form shall be properly completed by filling out all the heading blank spaces and identifying each item submitted. Special care will be exercised to ensure proper listing of the specification paragraph and/or sheet number of the contract drawings pertinent to the data submitted for each item.

7. SUBMITTAL PROCEDURE.

7.1 Procedure. Within seven (7) calendar days after receipt of notice to proceed, the Contractor shall complete and submit to the Contracting Officer, in duplicate, the submittal register (ENG FORM 4288) listing all submittals required under the contract and dates of submittal. The scheduled need dates shall be recorded on the register for each item for control purposes. Scheduling shall be coordinated with the approved progress schedule. The Contractor's quality control representative shall review the register at least every 7 days and take appropriate action to maintain an effective system. Updated or corrected copies of the register shall be submitted in duplicate within seven (7) calendar days.

7.2 Deviations. For submittals which include proposed deviations requested by the Contractor, the column "variation" of ENG FORM 4025 shall be checked. The Contractor shall set forth in writing the reason for any deviations and annotate such deviations on the submittal. The Government reserves the right to rescind inadvertent approval of submittals containing unnoted deviations.

7.3 <u>Submittal format</u>. Regardless of statements elsewhere in these contract documents, all submittals shall be submitted in hardcopy on paper in addition to any other format specified elsewhere (e.g., electronic format, electronic mail, etc.).

8. CONTROL OF SUBMITTALS.

The Contractor shall carefully control his procurement operations to ensure that each individual submittal is made on or before the Contractor scheduled submittal date shown on the approved "Submittal Register."

9. PAYMENT.

No separate or direct payment will be made for the work covered under this section, and all costs in connection therewith will be considered a subsidiary obligation of the Contractor.

* * *

SAFETY IS A TEAM EFFORT

CONTRACT DREDGING QUALITY CONTROL AND PROGRESS PAYMENT SURVEYS

SECTION 01330

1. DESCRIPTION OF WORK: For all work performed under this contract, the government will perform the pre-dredge and post-dredge surveys for final payment. The Contractor shall be responsible to perform all interim, progress payment and quality control surveys. All contract-required surveys shall be performed in accordance with the channel alignment data, angle points describing the channel layout and line files provided to the Contractor by the government. The government provided survey line file shall determine where contract survey lines shall be taken as well as all geospatial reference/control points to be used (e.g. specified tide gauge locations). The government provided survey line file will be a HYPACK For Windows (HFW) .LNW. This file will be provided to the contractor upon written government acceptance of items 1 through 5 of Paragraph 4.3.

Contract-required surveys a used in this section shall be defined as any survey which the contractor is required to perform as part of this contract, including but not limited to quality control, progress payment and final acceptance surveys.

For "multi-year" contracts and/or projects on which separate mobilization/demobilization efforts occur, whether government or contractor caused, all activities in this Section shall be repeated at the start of each new dredging cycle and/or mobilization.

2. GENERAL: The contractor shall provide all resources, including but not limited to a survey vessel and crew(s) necessary to perform all contract-required surveys. The survey vessel/equipment used to begin the contract-required survey operations shall be used for the entire contract period and shall not be changed. Accuracies and other standards are outlined in the hydrographic survey manual EM 1110-2-1003-Jan 01, 2002, Chapter 3. These hydrographic standards as modified by these contract documents shall be followed when performing any contract-required survey. Whenever a conflict arises, the stricter, more difficult requirement shall apply.

The Contractor shall be responsible for providing an independent surveyor to perform its surveys for interim, progress payment and quality control surveys. All contract-required surveys shall be performed by an independent surveyor whose equipment and work force is independent of the Contractor. The independent surveyor shall be required to document and certify in writing that s/he has a valid California professional license to practice surveying or an American Congress on Surveying and Mapping (ACSM) certification as an "Inshore Certified Hydrographic Surveyor" and has actively engaged in hydrographic survey operations during the past 3 years. The name of the surveyor and samples of previous hydrographic survey work shall be submitted to the Contracting Officer for review and acceptance. The contractor shall provide documentation indicating that accuracy standards for electronic horizontal positioning and depth finding equipment are met or exceeded for the surveys to be performed, including a Differential Global Positioning System (DGPS) capability to include as a minimum, the name, model,

and year of manufacture of the electronic equipment, the electronic frequencies of the depth finding equipment and the horizontal positioning equipment, and the manufacturer's stated positioning accuracy and capability of the equipment proposed for usage. In addition, the contractor shall provide information that a safe and suitable vessel is available for the surveying operations.

Quality control surveys shall be performed a minimum of once weekly during dredging operations and shall include contractor tracking and resolution of deficiencies in the work, all in accordance with ER 1180-1-6, Construction Quality Management and to verify that the work is being performed in accordance with ER 1180-1-6.

Reach acceptance surveys shall be performed at the end of each payment reach and shall be accompanied by the contractor's written certification that the work is complete and ready for final acceptance on the certification form included at the end of this Section.

3. HYDROGRAPHIC SURVEYS All contract-required surveys shall be performed in accordance with the following requirements. Failure to perform, process and submit contract-required surveys in accordance with all contract requirements shall result in rejection of the survey data and nonpayment for the contract dredging work performed until said surveys and submittals thereof comply with contract requirements..

3.1 All contract-required surveys shall be performed using the Hypack For Windows (HFW) files provided to the contractor by the government. All geospatial (vertical and horizontal) control shall be as specified in the contract documents. The contractor QC Plan shall affirmatively identify the use of these files and specified control.

Hydrographic survey procedures, including, but not limited to positioning modes, electronic position system calibration, accuracy requirements, depth measurements calibration, and data reduction, adjustment, processing and plotting shall conform at a minimum to those in the Hydrographic Manual, Corps of Engineers Manual Update, Jan 01, 2002, (EM 1110-2-1003) and as specified herein. Where there is a conflict, the more stringent requirements shall apply.

The HFW files provided to the contractor for its mandatory use when performing contract-required surveys will conform to the following requirements. Hydrographic sounding lines shall be taken perpendicular to the channel centerline. Centerline project stationing shall be used at all times throughout the hydrographic survey to label sounding lines. Sounding lines shall be (at a minimum) even 100-foot stations and more frequently at all channel angle points for the length of the survey as defined by the project .LNW line file.

Contract-required survey soundings shall not deviate more than plus or minus 10 feet off station alignment. The minimum survey line length from the toe of the channel to the end of the survey line shall be four times the project design depth in order to have data extend a minimum distance beyond the side slope daylight point, unless obstructed. The contractor shall conduct additional soundings on the backside of obstructions to complete

sounding lines. Obstructions shall be identified (e.g. ships, wrecks, docks). All line data shall intersect project templates. As required to complete lines, soundings shall be taken during high tides. Incomplete lines shall be re-run. The hydrographic survey system shall be capable of performing "field-finish" operations wherein survey data is collected, processed, and edited (cross-sections) in the field. Incomplete and inaccurate data (lines outside survey position limits) shall be resurveyed without delay, preferably on the same survey day. Cross-section data shall be available for immediate review and evaluation by the Contracting Officer Representative upon request.

3.2 All contract-required surveys shall include simultaneous two channel (dual frequency 20-33 KHz, 200-210 KHz) transducer recording shall be required for qualitative (20-33 KHz) and quantitative (200-210 KHz) evaluation of sediment lenses and density differentials.

All data used to determine reach and project acceptance, final quantity and final payment, including but not limited to pre-dredge and post-dredge surveys shall be from the government survey(s) and shall use only 200-210 KHz data. Contractor surveys will not be used for this purpose. The standard Hypack/smart overdepth average end area (AEA) computation shall be used for determining project quantities. It is explicitly recognized that differences may occur between contractor contract-required surveys and government surveys, however the government surveys will be used in all cases except gross error.

3.3 Automatic continuous digital tide gauge recording during all contract-required survey operations shall be required. Tide gauges shall record at a minimum of every five minutes or at an interval that allows no greater than a 0.1-foot change in tide level between measurements, whichever is less. The time and date of all surveys shall be provided on the cross-section plots for correlation with the printed tide record. These plots shall be submitted with the field books. Daily checks of the fixed tide gauge are to be correlated with the automatic system and said checks shall be included in the daily QC reports. The gauge(s) shall be operational during all surveys. The survey system shall have the capability for incorporating the real time tidal records on board the survey vessel if requested by Corps inspectors.

3.4 Squat/settlement curves developed as part of vessel calibration shall be on-board the survey vessel and are to be incorporated into the survey computations software program (HFW).

3.5 Existing fixed navigation markers shall be located by survey as part of the the initial contract QC survey is performed. The marker coordinates shall be annotated for each fixed marker in the HFW.tgt files and submitted with the survey.

3.6 The analog recording of echo soundings shall indicate a calibration check (bar check) of the echo sounding at the beginning and end of each analog paper change (if paper record is used) and at such times as necessary to ensure sounding accuracy. Frequency of calibration shall be specified in Contractor's Survey QC Plan.

3.7 The echo sounder shall have a frequency of 200-210 KHz, with a 3.5 degrees cone measured at the 6db point. The top of the return signal trace shall be the point of interpretation of sounding. Bar checks will be taken at a minimum of five foot intervals. Location/position of bar checks shall be recorded in QC reports. Surveys for contract measurement and acceptance require, as a minimum, twice daily calibrations at the project work site.

3.8 Failure to perform adequate calibrations, including documentation/certification thereof, can lead to rejection of the survey and any payment associated with it.

3.9 The contractor shall use survey methods which conform to the following precisions for control:
(1) Horizontal - Primary control shall be established to third order accuracy (1:5,000 ratio of closing error to length of line).
(2) Vertical - Primary vertical controls will close within 0.05 foot. Mean Lower Low Water (MLLW) datum shall be obtained by applying the adjustment for the area. All soundings shall be referenced to MLLW.

3.10 Minimum performance standards for hydrographic surveys shall be in accordance with EM 1110-2-1003, 1 Jan 02, Chapter 3, Table 3-1, Navigation & Dredging Support Surveys, Bottom Material Classification Soft, as modified following:

> Resultant elevation/depth accuracy for acoustical systems at all depths (d) shall be $\pm$ 0.5 feet.

3.11 Metadata – The contractor shall provide metadata in accordance with the 1994, the FGDC (Federal Geodetic Data Committee) Geospatial Data Standards for documenting origins and characteristics of geospatial data (EM110-1-2909, 1 Aug 96) addendum 01330-7.

4. COORDINATION, SUBMITTALS AND PROGRESS OF THE WORK

4.1 The Contractor shall coordinate all work with the government. No contract-required surveys shall proceed until written authorization is provided by the government, as described further in this Paragraph 4, below.
All submittals (hard copy and CD-R format) shall be delivered to:

U. S. Army, Corps of Engineers
San Francisco District
ATTN: Construction Services Branch
Bay Model Building
2100 Bridgeway Avenue
Sausalito, California 94965
Telephone: 415-331-0404

All e-mail format submittals shall be delivered to three (3) each government addresses to be provided.

4.2 A mandatory pre-construction surveying meeting shall be held to review survey control/ equipment/ procedures/ QC program/ safety plan/ dredging control/ calibration/ schedule/vessel reports/ submittals and channel configuration. This meeting shall be held prior to commencement of any contract-required surveying or dredging. This meeting shall be coordinated with the San Francisco District Construction Services Branch in the Sausalito Resident Office (415-331-0404).

4.3 The following contract submittals shall be submitted a minimum of (1) one week prior to the pre-construction survey meeting and shall be discussed at the meeting.

(1) Survey Schedule/frequency of QC/ progress surveys.

Contractor's schedule for all contract-required surveys. At a minimum, the schedule shall reflect the initial vessel to vessel calibration survey, the pre-dredge quality control survey, the number of typical weekly quality control surveys that will be performed, progress payment surveys and final acceptance surveys.

(2) Survey Vessel Safety Plan demonstrating full compliance with EM 385-1-1 for floating survey vessels. Completed initial survey vessel checklist and written certification of vessel safety shall be included with this Plan.

(3) Survey QC Plan

The survey component of the project QC plan shall completely address the quality control of the survey activity and coordination with the dredge plant, including but not limited to accuracy and reliability of the equipment and reliability of the QC plan system. The survey QC Plan shall identify a proposed CQ Manager specifically for survey quality control who shall demonstrate appropriate knowledge and experience in hydrosurveying.

(4) Equipment Inspection/Vessel/Installation (Contract Survey Vessel Inspection Checklist)

The Contract Survey Vessel Inspection Checklist (included in this section) shall be completed by the contractor and shall describe the survey equipment installed on the vessel, to include technical descriptions/specifications of all installed hardware/software.

(5) Current surveyor qualifications/license/vessel operator/personnel

Contractor shall identify the vessel and all surveyor(s) and equipment operator(s) to be used on this project. Contractor shall include information identified in

Paragraph 2 of this Section, at a minimum to demonstrate capability and compliance.

4.4 A mandatory contractor survey vessel to government survey vessel on-site calibration check shall be performed. Said calibration check shall be performed only after government acceptance of Paragraph 4.3 Items 1-5 (above). Contractor shall request to perform this check in writing a minimum of three (3) working days prior to proposed date of check. This check shall be satisfactorily completed and accepted by the government in writing prior to any dredging.

This check is to be performed as follows: The vessel to perform contractor's dredging support surveys shall perform surveys on a minimum of 4 government-selected lines prior to performing contract surveys. Data shall be compared with government vessel survey data and evaluated for accuracy, completeness, data anomalies, relative errors, vessel velocities, and trackline errors. A QC report shall document the results of the vessel comparisons and shall be submitted for vessels. The contractor shall provide reports prepared by the survey vessel party chief documenting the results of the calibrations and comparisons of survey data for government review and acceptance.

4.5 Pre-dredge QC survey.

The contractor shall perform a pre-dredge QC survey of the entire dredging contract to include all lines as provided by the government. Said survey shall not begin until written government acceptance of the vessel to vessel calibration (Paragraph 4.4). The government shall be allowed a minimum of one (1) week for review of this submittal. No contract dredging shall be performed until after government written acceptance of pre-dredge QC survey results.

4.6 Dredging QC surveys.

During dredging activity, QC contract-required surveys shall be performed weekly at a minimum. These surveys shall include the areas dredged since the last survey and shall include one line of overlap. Additional QC contract-required surveys may be required by the COR upon notification to the contractor of additional surveys to be performed for quality control/progress.

A weekly dredging progress workplan shall be prepared and submitted by the contractor with the relevant QC contract-required survey submittal. This workplan shall show and describe which areas have been dredged during the previous week and which areas will be dredged for the next week. The workplan shall be updated/submitted as an Autocad document (.DWG) with a project channel contained in the dwg file and areas dredged shown on the plan.

A weekly Quality Control survey meeting between the contractor and the government will be held during contract dredging operations. This meeting will be held after receipt of the weekly QC contract-required survey submittal and weekly dredging progress workplan.

4.7 Progress payment surveys

Any progress payment which includes dredging work shall include with the payment request a progress payment survey submittal. The payment request will not be deemed complete and sufficient until receipt of a complete progress payment survey submittal. The progress payment survey shall include a separate longitudinal profile of the left and right toes, and project centerline for correlation with the cross-line surveys be inclusive of limits of the entire reach designated for the progress payment. The survey shall include all lines on the subject reach, which lines have been dredged to the date of the progress payment request, whether or not those lines include work previously paid. The survey shall be current and performed continuously over consecutive working days. It shall not include survey data from earlier surveys and/or previous pay requests. Composited/selected data sets of survey line files are not acceptable. All progress payment surveys shall reflect complete and sequentially surveyed lines.

In addition to the information provided as part of all contract-required survey submittals, all progress payment survey submittals shall include information identified in Paragraph 4.12.

4.8 Reach acceptance surveys

A reach acceptance survey and submittal shall include all of the work and information included in QC survey and submittals and progress payment survey and submittals. In addition, a reach acceptance survey submittal shall include completion of the Contractor Certification Statement included at the end of this Specification Section.

If the government post-dredge survey finds the reach to be unacceptable, the contractor will be required to complete dredging and repeat this process. Subsequent government surveys will be required. The cost to contractor for these subsequent government surveys will be $7000.00 per day.

Each successive dredging reach shall be surveyed and accepted/rejected in accordance with this procedure. ~~A project reach payment may be made for up to the 90% level of completed progress. Full payment (100%) for a reach will be made upon final acceptance of the entire project.~~

4.9 During the period of the dredging contract, the contractor shall not de-mobilize from the project until all reaches have been fully accepted at the 100% level of completion. The COR will specify in writing that all work is complete and that the contractor shall de-mobilize from the project site.

4.10 Acceptance reaches as follows:

REACH #1 STA
REACH #2 STA

REACH #3 STA
REACH #4 STA

All data used to determine reach and project acceptance, final quantity and final payment, including but not limited to pre-dredge and post-dredge surveys shall be from the government survey(s) and shall use only 200-210 KHz data. Contractor surveys will not be used for this purpose. The standard Hypack/smart overdepth average end area (AEA) computation shall be used for determining project quantities.

The government pre-dredge survey to be used for payment purposes will be performed for all reaches at the start of the project. A separate pre-dredge survey will not be performed for each reach individually or at staggered times. The government post-dredge survey for payment purposes will be performed for each reach individually after receipt of the contractor certification that the reach is complete and ready for acceptance.

4.11 Survey Data Identification Procedures and Requirements

All electronic survey data submitted to the Corps shall contain a string of information in the title that clearly identifies the contents of the data. The information is specific for each dredging project and each reach of a dredging contract within the San Francisco District. The identification string consisting is divided into 5 separate fields. The 5 individual data fields shall contain the following information in the specific order as shown by the sample string below:

1. Project	SB
2. Surveyor	Contractor (Five (5) string to be defined by the government)
3. Type of Survey	QC (contract-required survey)
4. Julian Date (3)(2)	3 Characters=Day
	2 Characters=Year
5. Reach #	R#

A sample data string title would consist of the following information for a compressed data set:
RI_contractor_QC_03203 R2.zip

4.12 Survey Submittals

All contract-required surveys shall be submitted to the government. Said submittal shall be submitted to the government within two (2) working days of survey completion, in hard copy, electronic CD-R and email format and shall not be considered until all 3 formats are received. All hard copy information (e.g. photocopies, written reports) shall also submitted as a ".jpg" file.

All survey submittals shall include the following:

1. File identification label per Paragraph 4.11.

2. Survey QC logs prepared daily during the course of the survey activity. This mandatory survey QC log shall report, at a minimum, the personnel, craft, equipment, layout, weather/sea conditions, survey lines accomplished and geospatial controls used and shall include copies of all original field notes. Additional information may be required by the government.

Field notes shall include at a minimum:

(a) level line notes, elevation data, benchmarks, temporary benchmarks and location of all control used by the contractor;

(b) the position and identification of all obstructions preventing the collection of soundings.

3. Survey Vessel Inspection Checklist prepared daily during the course of survey activity and demonstrating full compliance with contract documents, including requirements identified on the Checklist.

4. HFW survey raw and edited data, including completed HFW file legend.

All survey submittals for progress payment or acceptance shall also include:

5. Quantity calculations including tabulation of quantities.

5. PAYMENTS No separate payment will be made for the work specified under this section. Payment for performing the interim surveys for progress payment, quality control surveys (QC), including furnishing data, quantity computations and drawings, will be included in the applicable contract unit prices for dredging.

References

a. Contract Survey Vessel/Safety Inspection Checklist
b. EM 1110-1-2909, Aug 96 Geospatial Data
c. General Survey Criteria EM 1110-2-1003, Jan 01, 2002
d. Contract Survey Vessel Inspection Checklist (Technical)

Contractor Certification Statement

CERTIFICATION STATEMENT
ACCEPTANCE SECTION/SURVEY:

REFERENCED SOURCE DOCUMENT:
EM 1110-2-1003, 1 JAN 02, P.14-13
I have fully observed the performance of the subject survey and have determined, based on my review of the referenced source document record, that the data contains no evidence of collusion, fraud, or obvious error. The recorded data, including calibration corrections thereto, have been obtained in accordance with the systematic/procedural methods and techniques Described in the contract documents, that all known and unknown systematic and random errors have been minimized consistent with: (1) The relative precision errors of the equipment utilized; and (2) Absolute accuracies expected (or likely) given current (state-of-the-art) horizontal and vertical measurement limitations associated with offshore survey system, procedures, and related variables; and, as such, the observed/recorded data are fully and finally acceptable for determining and measuring contract performance and payment. I further certify that Reach ___ is complete and ready for Final Acceptance Survey by the government.

AUTHORIZED REPRESENTATIVE: _____

/S/ _____

TITLE:_____

DATE:_____

DIVISION 2 - SITE WORK

SECTION 02480

DREDGING

1. WORK COVERED BY CONTRACT PRICES.

The contract price per cubic yard for dredging shall include the cost of removal and disposal of all shoaled materials as specified herein or indicated on the drawings.

2. MOBILIZATION AND DEMOBILIZATION.

2.1 Mobilization shall consist of all work required in preparing the Contractor's dredging plant and equipment for shipment; moving plant, equipment, labor, materials, supplies and incidentals to the job site; making ready for dredging; and maintaining plant and equipment in working condition at the site during the dredging period.

2.2 The Contractor's plant and equipment to be used in performing the work shall be of sufficient size and efficiency to meet the job requirements and will be subject to approval by the Contracting Officer or a properly designated Contracting Officer’s Representative (COR).

2.3 Demobilization shall consist of all work required to prepare plant and equipment for return trip and removing all plant, equipment, labor and unused supplies and incidentals from the job site at the completion of the contract work, including cleaning up any land based staging site used in the prosecution of the work.

2.4 The Contractor shall agree that the construction plant, equipment and material will not be removed from the site without the written permission of the Contracting Officer; and agree that structures and facilities prepared or erected for the prosecution of the contract work will be maintained and not dismantled prior to the completion and acceptance of the entire work without the written permission of the Contracting Officer.

3. ESTIMATED QUANTITIES.

The estimated quantities shown in the bidding schedule for dredging includes material to be removed to the maximum limit of overdepth dredging as follows:

3.1 Standard and Advanced Dredging. The total estimated quantities of material to be removed in the required standard dredging prism (exclusive of allowable overdepth), as shown in the bidding schedule is as follows:

Bid Items	Cubic Yards
0002A	190,000

These quantities will be used in determining adjustments, if any, under the terms of Special Clause "VARIATIONS IN ESTIMATED QUANTITIES - DREDGING".

3.2 Overdepth Dredging. Overdepth dredging will be allowed to the limits specified in paragraph 8, "OVERDEPTH AND EXCESSIVE DREDGING". The maximum amounts of overdepth dredging are as follows:

Bid Items	Cubic Yards
0002B	160,000

These quantities will be used in determining adjustments, if any, under the terms of Special Clause "VARIATIONS IN ESTIMATED QUANTITIES - DREDGING".

4. SITE CONDITIONS.

The material to be removed to restore the depth within the limits shown on the drawings is composed of material that has accumulated since the channel was last dredged to that depth. In accordance with Contract Clause "SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK (FAR 52.236-0003)" the Contractor is expected to examine the site of the work. The records of previous maintenance dredging are available at the office of the District Commander, U. S. Army Corps of Engineers, 333 Market Street, San Francisco, California 94105.

5. DREDGING.

5.1 General. Attention is directed to paragraph 3, "ORDER OF WORK", in Section 01005, "SUPPLEMENTARY CONDITIONS", wherein commencement of mobilization and dredging is specified. Unless otherwise authorized, all dredging shall be performed in the presence of the Contracting Officer or COR. Where dredged material is to be disposed of at the Government-furnished deep ocean disposal site ("SF-DODS"), dredging shall be performed by either (or a combination of) hopper dredging, hydraulic dredging, clamshell dredging, or other approved method. Except for hopper dredging, transport of all dredged material for disposal shall be by barge.

5.2 Dredging Plan of Operation. Prior to any dredging work, the Contractor shall submit a dredging plan for review and comment. Dredging shall not commence until all comments have been answered to the satisfaction of the Contracting Officer or COR. The plan shall show barge anchoring locations, hydraulic pipelines, pipe anchoring locations, hopper dredging lanes, description of hopper overflow operations, instrumentation used, coordinates and land elevations of all control points for electronic positioning system and MLLW determination, estimated daily dredge advances, quality

control survey procedures, anticipated problem areas of project involving poor access due to boat traffic congestion or boat docking, and procedures to assure that dredging will proceed within the contract template and performed in the most economical manner. The plan shall be updated on a weekly basis to allow notification to harbor and boat owners of dredge progress.

5.2.1 Acceptance Reaches for Payment. The Contractor shall schedule his dredging and disposal operations in accordance with the following specified sequence of dredging reaches, with all dredging/payment/acceptance reaches defined on the drawings. Each reach shall be pre-dredge surveyed, dredged to specified project depth, post-dredge surveyed, and accepted as final by the Government before progressing to the next reach, unless directed by the Contracting Officer. Any deviation from this sequence shall be requested and approved in writing.

REACH 1	OUTER HARBOR STA 0+00 TO STA 89+88
REACH 2	OUTER HARBOR STA 89+88 TO STA 173+56
REACH 3	INNER HARBOR STA 5+04.44 TO STA 113+17
REACH 4	INNER HARBOR STA 113+17 TO STA 174+91
REACH 5	INNTER HARBOR STA 174+91 TO STA 206+92

The contract hydrographic survey soundings represent conditions existing on the date of the survey shown on the drawings. The pre-dredge and post-dredge surveys performed by the Government on each reach will be used in determining quantity of material for payment. Determination of quantities removed, the deductions made there from and the related computations to determine quantities by in-place measurement to be paid in the area specified, after having once been made, will not be reopened, except on evidence of collusion, fraud, or obvious error. No progress payments will be made for each reach until all corresponding Contractor Q/C survey computations, data, field notes and drawings are received by the Contracting Officer.

The Contractor shall complete each dredging reach and perform required Q/C surveys for each reach prior to beginning work in any successive dredging reach. The Government Project Engineer shall accept or reject each reach in writing. The Government inspector shall record the acceptance or rejection of each reach in the daily QA report. Only one (1) acceptance survey shall be performed by the Government. Each additional survey required for each reach, if rejected, shall be the responsibility of the Contractor. If additional surveys are necessary, they shall be assessed against the Contractor at the rate of $7,000.00/day to perform surveys by the Government. Prior to acceptance all shoaling occurring in the reach shall be the responsibility of the Contractor. Shoaling occurring after acceptance of the reach shall be removed in accordance with terms specified in Section 02480-10, 11.2.5, Shoaling.

5.3 Overflow, Spillage and Leakage.

5.3.1 Overflow from Barges and Scows. No overflow of dredged material or water will be allowed from the receiving barges or dump scows during dredging operations, except as follows: overflow will be allowed only under the following combined conditions: (1) the material is dredged with a hopper dredge, or hydraulic dredge (cutter-head, suction, or vortex type); and (2) the material is

suitable for ocean disposal, as approved by the Contracting Officer or COR. Where overflow is allowed, overflow time shall be limited to 15 minutes and the discharge shall be below the water surface.

5.3.2 Overflow from Hopper Dredges. Overflow during dredging will be allowed. During hopper dredging, the time of allowable overflow of dredged material and water from hopper bins shall be limited to the most economical load based on hopper load charts for hopper dredges as approved, but in no case longer than 15 minutes. All overflow shall be discharged below the water surface.

5.3.3 Spillage and Leakage. Dredged material and water shall not be permitted to spill over or leak out of barges, hopper bins or dump scows while in transit to the disposal site. Barges or dump scows which exhibit ~~an average~~ **a** loss in vessel draft in excess of 1 foot between the loaded barge draft recorded at the dredging site and the predisposal draft recorded at the ocean disposal site, will be taken out of service for this project until repaired. The Contractor shall record draft of hull for each scow load as specified under quality control. If applicable, no loss in draft or volume will be permitted from containers transporting dredged materials for land disposal. The Contractor shall paint visible draft levels at 1 foot intervals and at the 80 percent load line on the inside of each scow and hopper bin.

5.3.4 Monitoring of overflow, spillage and leakage shall be as specified in Section 01405, "QUALITY CONTROL".

5.4 Horizontal Position Monitoring of Dredge. The Global Positioning System (GPS) utilizing the Coast Guard Point Blunt D-Beacon shall be used, or other method subject to approval of the Contracting Officer.

5.5 Tidal Control During Dredging. To establish dredging depth to the MLLW datum, the Contractor shall install an automatic recording tide gage with water level sensor placed at the closest Government-furnished tide gage site to each reach of the dredging work or as otherwise approved. The tide gage shall provide a continuous recording of tidal change for every 5-minute interval or each 0.1 foot change, whichever occurs first. Tidal changes shall be recorded in MLLW datum, with these changes clearly displayed for the dredge operator at all times during the dredging process to allow proper adjustment of dredge depth. A printed record of the tidal changes shall become part of the Contractor's daily quality control report.

5.6 Inherent Delays. The Contractor shall anticipate inherent delays while dredging around obstructions such as cable, pieces of metal, chains, etc., that may foul the cutter-head or clamshell and require removal. The bid prices shall include allowances for such inherent delays.

5.7 Survey of Barge Filling Areas Located Outside of the Project Limit. If a receiving barge or dump scow is located outside of the dredging limits during dredging operations, the Contractor shall submit a plan to the Government on how the survey of this area will be performed. This monitoring measure is to ensure no dredged material has been spilled outside the designated dredging areas. Drawings and data shall be provided as specified in Section “CONTRACT DREDGING QUALITY

CONTROL AND PROGRESS PAYMENT SURVEYS", paragraph "HYDROGRAPHIC SURVEYS". The drawing requirements may be substituted with CAD drawings and/or HYPACK surveys subject to the Contracting Officer's approval.

5.8 Debris. If debris is encountered within the dredging prism during the dredging process, it shall be removed and placed in a separate barge or other conveyance and disposed of as specified in subparagraph 6.4, "Disposal of Debris".

5.8.1 Slurring Method. The Contractor may slurry dredged material at the dredge site by passing the material through a grid with openings of not more than 12 inches in any dimension. The Contractor may propose another method that will similarly break up the dredged material which will be subject to the approval of the Contracting Officer. For the grid system or alternate method, the Contractor shall submit his plan for slurring and disposal, including but not limited to procedures and equipment used to generate slurry, quality control organization, testing procedures, and test reporting procedures at least ten (10) days prior to dredging.

6. DISPOSAL OF DREDGED MATERIAL AT DEEP OCEAN DISPOSAL SITE (SF-DODS).

6.1 General. Dredged material shall be transported by hopper dredge or barge and deposited by open water dumping at the Government-furnished deep ocean disposal area (SF-DODS) indicated on the drawings. Each load drop shall be identified with northing and easting coordinates on the daily Quality Control Report for that day. Disposal operations shall be performed as directed and unless otherwise authorized (by verbal communication or in writing) shall be in the presence of the Contracting Officer. No debris or material other than natural clay, sand or silt shall be deposited in the ocean disposal area.

6.2 Site Management and Monitoring Plan (SMMP) Requirements for Ocean Disposal Area. The Contractor shall adhere to the following SMMP provisions for disposal of dredge material at the ocean disposal area:

6.2.1 Barges shall not leave the bay when wave heights along the transit route are predicted to exceed 10 feet and wave periods are less than 9 seconds, or when waves are greater than 16 feet regardless of wave period. Under less severe weather conditions, extra precautions (such as reducing the load up to 15 percent) shall be taken to prevent spillage or other loss of material during transit to the site. The Contractor shall verify predicted sea state via marine forecasting on the radio and Internet and note results of both forecasts in their daily quality control report. No vessel shall commence transit without such verification and notation in the daily quality control report. For more specific instructions refer to Appendix 16.

6.2.2 For each tugs trip to the ocean disposal site, barges shall be loaded to 80 percent of their load lines or 80 percent of bin capacity, whichever governs, to avoid spillage. Loading shall be reduced below 80 percent if weather or sea conditions cause spillage.

6.2.3 No disposal barge shall be filled above its load limitation that shall be defined as 80 percent of its load line or 80 percent of bin capacity, whichever governs, and all loads shall be certified by the Contracting Officer or COR that the requirement has been met prior to departing for the disposal area. The scows shall have the 80 percent load line clearly marked inside of the bin for visual verification by the Contracting Officer or COR.

6.2.4 No water or dredged material shall be permitted to leak or spill from barges during transit to the ocean disposal area.

6.2.5 The maximum tow speed shall be 6 knots over the bottom for loaded barges or as approved by the Contracting Officer or COR.

6.2.6 Tug boats with barges shall remain outside of the territorial sea boundary surrounding the Farallon Islands by following the inner portion of the outbound western shipping lane for transit into and out of the bay. Vessels shall remain at least 3 nautical miles from the Farallon Islands at all times. The Contractor shall furnish a vessel transit alignment plan for approval to the Corps of Engineers.

6.2.7 When barges are west of the Vessel Separation Scheme (VSS), the tug shall proceed directly to the ocean disposal site. The barges must be towed in transit routes that pass at least 3 nautical miles from the Farallon Islands.

6.2.8 The U.S. Coast Guard's (USCG) Offshore Vessel Movement Reporting System (OVMRS) which extends 38 miles offshore from Mount Tamalpais, shall be used to track barges within its range.

6.2.9 Tug boats are required to use an electronic positioning system (i.e., a Global Positioning System (GPS) with a minimum accuracy and precision of 100 ft) for disposal operations. If the positioning system fails, all disposal operations shall cease until the navigational capabilities are restored.

6.2.10 No more than one disposal vessel shall be present within the permissible dumping target (as described in the following paragraph) at any time.

6.2.11 Dredged material shall be discharged within a 4000 foot diameter circle centered at 37°39'N, 123°29'W (NAD 1983).

6.2.12 When dredged material is disposed, no portion of the barge shall be further than 2000 feet from the center of the ocean disposal area.

6.2.13 The Contractor shall maintain daily records of dredging operations, transportation schedules, barge load volumes disposed, and exact location and time of disposal.

6.2.14 The tug captain shall maintain a copy of all weather reports and shall make wind and sea observations.

6.2.15 Each tug boat shall maintain a computer printout from GPS or other approved navigation system showing transit routes and disposal coordinates, including the time and position of the disposal barge when the barge doors open and close.

6.2.16 The Contractor's quality control staff shall observe all dredging operations and submit reports containing a description of operations for each barge load, a checklist, a transit route map, a printout of coordinates from each waypoint and release point, a record of radio transmission and facsimile from the tug captain on a weekly basis.

6.2.17 The Contractor shall allow observers from the Point Reyes Bird Observatory or other appropriate independent observers as specified in permits to be present on disposal vessels on all trips to the ocean disposal area for the purpose of conducting surveys of seabirds and marine mammals. The Contractor shall allow the independent observers to be present on a sufficient number of vessel trips to characterize fully the potential impact of disposal site use on seabirds and marine mammals. At a minimum, the Contractor shall ensure that independent observers are present on at least one disposal trip in any calendar month in which a disposal trip to the ocean disposal area is made.

6.2.18 The Contractor shall allow on-board inspections by EPA Region IX staff, Corps of Engineers staff, or a certified inspector to ensure that the transportation and disposal of sediments occur within the designated discharge zone and that compliance with all permit terms and conditions are met.

6.2.19 The Contractor shall report any violation to the EPA and the Contracting Officer within 24 hours. In the event of a violation, the Contractor must make all necessary changes to bring disposal operations into compliance before making another trip to the ocean disposal area.

6.2.20 Development and implementation of more sophisticated surveillance systems, which can be demonstrated to the Contracting Officer to be effective and capable of being audited, may be substituted pending approval from the Contracting Officer for one or more of the above provisions.

6.3 Disposal Vessel Location (for Ocean Disposal Area). Methods used for the dredge positioning, as specified under Paragraph "DREDGING", shall also be used to display and record the disposal vessel's location at 1-minute time intervals throughout the loading, transport and disposal cycle of each disposal vessel. The Dredge Data Logging System (DDLS) data shall be received onboard the actual disposal vessel. Position data shall be annotated for the time actual dumping is in progress. A copy record of the DDLS position data, correlated with time and annotated with date, shall be submitted to the Contracting Officer as part of the daily Quality Control Report. The Contracting Officer shall have access to the monitoring equipment in order to observe its operation during disposal operations. Dredge inspectors shall be provided with hand-held GPS equipment to verify dredge disposal in SF-DODS. For more specific instructions refer to Appendix 10.

6.4 Disposal of Debris. Debris, man-made objects, timber, chains, anchors, flotsam,

miscellaneous metal objects and other foreign material removed during dredging shall not be disposed of in the Government-furnished disposal areas. Such material shall be disposed of at a land site at the responsibility of the Contractor.

6.5 Misplaced Material. Any material that is intentionally or unintentionally deposited in places other than those specifically designated or approved by the Contracting Officer or COR will not be paid for and the Contractor shall be required to remove such misplaced material and deposit it where directed at his expense.

6.6 Notification. When utilizing the ocean disposal area, the Contractor shall notify the U.S. Coast Guard via radio (S.F. Bay Traffic on Channel 14) five minutes in advance of actual departure from the dredge site and immediately prior to actual disposal operations. The Contractor shall follow established guidelines by the U.S. Coast Guard and maintain a log of disposal movements using the form in Appendix 9-1. By Monday morning of each week, the Contractor shall submit the prior week's electronic disposal site logs on a CD to the: U.S. Army Corps of Engineers, Operations and Readiness Division, 333 Market Street, Rm 809, San Francisco, CA 94105, ATTN: David Dwinell. Mr. Dwinell shall be contacted at (415) 977-8471 for coordination and specific requirements. **All information submitted to David Dwinnell shall also be submitted at the same time to the Project Engineer in writing (hardcopy) and in electronic format. Submittal shall include written analysis of the data in the report including deficiency tracking information per Section 01405 QUALITY CONTROL**.

7. DDLS BACKUP SYSTEM.

Any failure of the DDLS system, components and sensors shall be repaired within 48 hours of the failure in accordance with Appendix 10 subparagraph "Sensor Performance Requirements". During the 48-hour failure period, the Contractor shall continue dredging and disposal operations utilizing his DDLS backup system. The DDLS backup system must be approved by the Contracting Officer and shall be in place and operational prior to dredging and disposal operations.

8. OVERDEPTH AND EXCESSIVE DREDGING.

8.1 Overdepth. The 1 foot allowable overdepth shown on the drawings is being allowed only to assure removal of a sufficient amount of material to reach project depth and width. No payment will be made for materials removed from beyond the neat line template (side slope) or maximum overdepth pay-line shown on the drawings. Materials sloughing into the payment area from outside the neat line side slopes shall be removed at no additional cost to the Government. Overdepth dredging will not be allowed in areas already at or below project depth.

8.2 Excessive Dredging. Dredging shall not be performed below the allowable overdepth. The Contractor may be subject to sanctions by Federal, State and local agencies for excessive dredging.

Any dredging below allowable overdepth shall be identified immediately by the Contractor as a deficiency and tracked and corrected in accordance with Section 01405.

9. REPORTING REQUIREMENTS.

The Contractor will be required to prepare and submit daily reports of operations on quality control forms as directed and/or accepted by the Contracting Officer or COR. Sample forms are shown in the Appendixes at the end of this section. The daily reports, which may be supplemented with hydrographic survey cross-sections, shall document dredging operations for all shifts in a 24-hour period. Further instructions on the preparation of the reports will be furnished at the pre-dredging conference. **All information submitted electronically shall also be submitted concurrently in hard copy with applicable analysis and shall not be considered a complete submittal until both formats are received**.

9.1 DDLS Records. Electronic copies of the DDLS positional data shall be submitted to the Corps on CD-ROMs. Positional data shall include records of dredge equipment and all disposal vessels utilized for this contract. The Contractor shall furnish the CD-ROMs, and a copy of the computer program and hardlock (if required) to playback/print all contract DDLS electronic data to: U. S. Army Corps of Engineers, Construction Services Branch, 2100 Bridgeway Boulevard, Sausalito, CA, 94965.

10. PREDREDGE AND POSTDREDGE (FINAL) SURVEYS.

The Government will perform the predredge survey(s) after award of contract and prior to commencement of dredging. For the postdredge survey(s), the Contractor shall notify the Contracting Officer at least 72 hours prior to completion of the entire work or any acceptance reach as approved by the Contracting Officer and the Government will perform the final survey approximately 5 days after completion of the work or acceptance reach at no cost to the Contractor. All reaches found to be in compliance with the contract requirements will be accepted finally and be measured for payment as stated in Paragraph "MEASUREMENT AND PAYMENT", subparagraph "Measurement for Payment" hereinbelow. If the Government is unable to perform the final survey(s) due to the failure of the Contractor to complete the work in accordance with his prior notification, the Contractor shall be responsible for any survey plant and labor standby costs at $7,000.00 per day and an adjustment will be made to the contract price therefore. Preliminary data from the final Government survey will be available within five (5) calendar days. If the preliminary survey data indicates that the project is not to the depth required in some or all of the reaches or the completed work, then the Contractor shall resume dredging within seven calendar days after completion of the field survey work to complete the work down to project depth. When the acceptance reach or completed work is found to be in satisfactory condition, it will be accepted. The Government will perform only one post-dredge survey per reach or completed work at no cost to the Contractor. Any additional post-dredge surveys or sounding operations performed by the Government due to the Contractor not reaching project depth in a reach or completed work shall be charged to the Contractor at the rate of $7,000.00 per day for each

day in which the Government plant is engaged in sounding and/or is en route to or from the site, or held at or near the said site, for such operations. The Contractor will not be allowed any additional compensation for work under this paragraph.

11. MEASUREMENT AND PAYMENT.

11.1 Mobilization and Demobilization. Payment for mobilization and demobilization will be made at the contract lump sum price for "Mobilization and Demobilization" in the schedule under which contract award is made, and in accordance with Special Clause "PAYMENT FOR MOBILIZATION AND DEMOBILIZATION". This price and payment shall be full compensation for moving all plant, labor, materials, supplies and equipment necessary to perform the dredging onto the jobsite, preparing plant and equipment ready for work, and removing same from the jobsite upon completion of the contract work.

11.2 Dredging

11.2.1 Measurement for Payment. Measurement for payment of the total amount of material dredged will be made based on the cubic yards of material in-place, by computing the volume between the bottom surface shown by soundings from the Government pre-dredge survey taken before dredging and the bottom surface shown by soundings from the final Government post-dredge survey compared with the neat line template, using the average-end-area method. This quantity shall include excavation performed within the allowable overdepth limits and exclude excessive dredging as specified under paragraph "OVERDEPTH AND EXCESSIVE DREDGING".

11.2.2 The contract drawings represent conditions existing on the date of the survey shown on the drawings and are for information purposes only. A pre-dredge survey will be performed by the Government prior to issuance of the NTP and will be used in determining quantity of material for payment. Determination of quantities removed and the deductions made therefrom to determine quantities by in-place measurement to be paid in the area specified after having once been made will not be reopened, except on evidence of collusion, fraud or obvious error. No payments will be made until all computations, field notes and drawings are received for progress payment.

11.2.3 Monthly partial payments will be based on approximate quantities determined by electronic hydrographic soundings as specified in Section " CONTRACT DREDGING QUALITY CONTROL AND PROGRESS PAYMENT SURVEYS". Copies of all original field notes, quantity computations and drawings performed by the Contractor for the purpose of layout and progress shall be furnished to the Contracting Officer at the site of work for use by the Contracting Officer to the extent necessary in determining the proper amount of progress payments due the Contractor.

11.2.4 Payment for dredging will be made at the applicable contract unit prices bid, in the schedule(s) under which contract award is made. These prices and payments thereof shall constitute full compensation for all mobilization and demobilization, dredging, progress payment surveys, quality control surveys, barge filling area surveys and disposing of all materials above allowable overdepth and

side slopes, in accordance with the drawings and specifications.

11.2.5 Shoaling. Shoaling occurring within project limits prior to acceptance of any section or reach shall be removed by the Contractor and no additional payments will be made by the Government for dredging and disposal of this material. Shoaling occurring within the project limits after acceptance of any reach and prior to the completion of the contract shall be removed at the contract unit price for dredging, within the limit of available funds, if agreeable to both the Contractor and the Contracting Officer. The quantity of shoaling to be paid for will be measured by the cubic yard by computing the volume between the surfaces shown by soundings taken after shoaling and the final survey made after the shoaled material has been removed.

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